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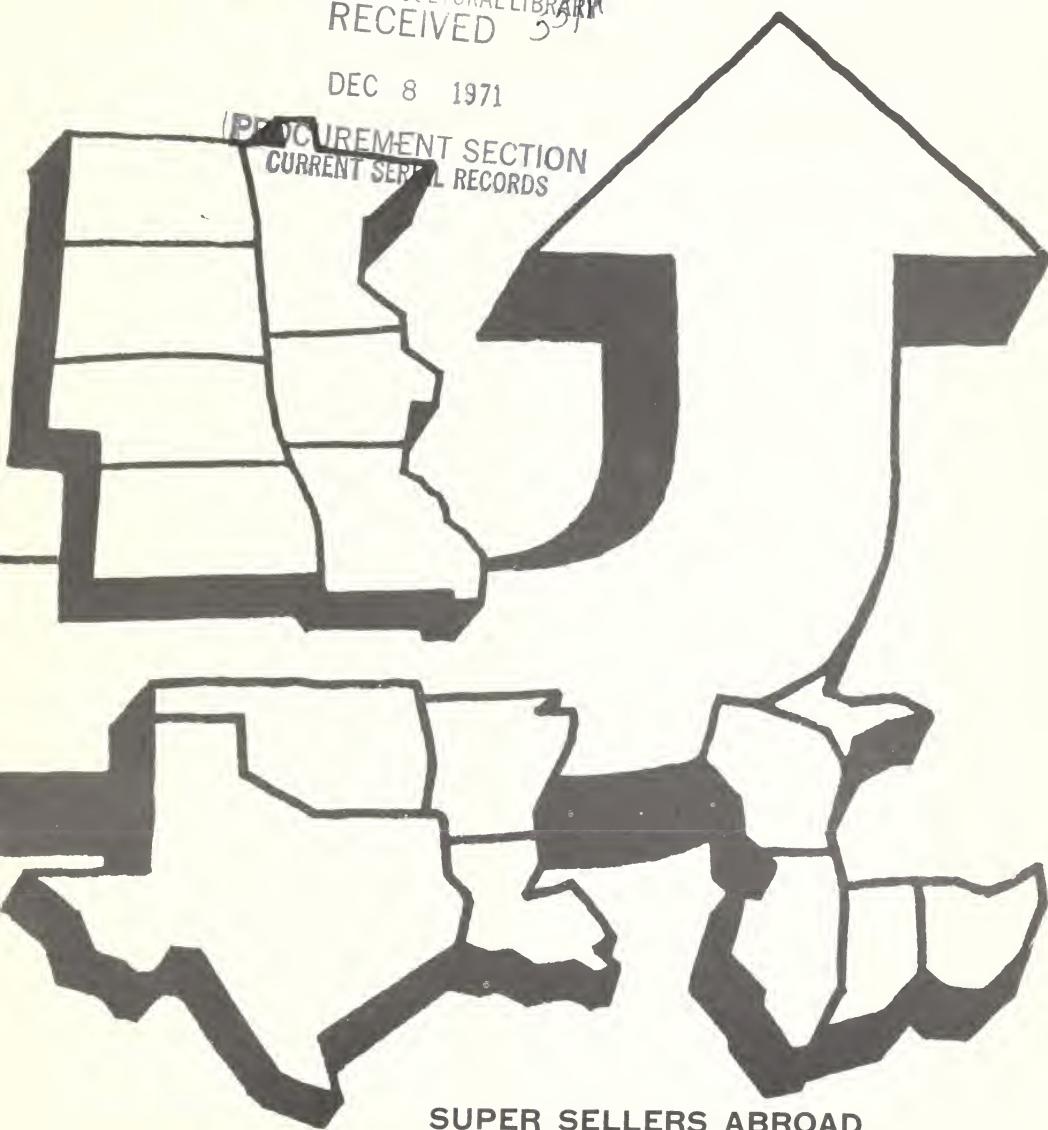
**the crop reporters magazine**

U.S. Department of Agriculture Statistical Reporting Service December 1971

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**SUPER SELLERS ABROAD**



## SUPER SELLERS ABROAD

U.S. farm exports have been racking up some pretty impressive records of late.

After setting a calendar-year high of \$7.2 billion in 1970, our farm products sailed on to a new fiscal year record of \$7.8 billion in 1970-71. This latest record tops the former one of 1966-67 by \$988 million—and is 15 percent greater than our farm export value in 1969-70.

All of the gain in 1970-71 over the year before was chalked up in our commercial shipments (sales for dollars). These shipments set a top mark of \$6.7 billion.

Just how big a stake the U.S. farmer has in markets abroad is evidenced by the fact that exports generated \$1 out of every \$7 worth of gross farm income in 1970-71—and required the output of 1 in 4 harvested acres.

More than 62 percent of the rice produced in 1970 was shipped overseas, along with 53 percent of the soybeans and wheat, 35 percent of the tobacco, 36 percent of the cotton, 41 percent of the tallow, and 44 percent of the hides and skins.

Three regions—the West North Central, East North Central, and West South Central—accounted for 63 percent of our 1970-71 overseas sales.

(Regional and State export figures shown in this story are not actual exports but are based on contributions to the Nation's output.)

Valued at \$2.3 billion, West North Central Region exports comprised 29 percent of the U.S. total in 1970-71. The region supplied nearly all the flaxseed moving abroad, along with half the wheat and flour and dairy products, two-fifths of the feed grains, and more than a third of the other livestock products, soybeans, soybean oil, and protein meal.

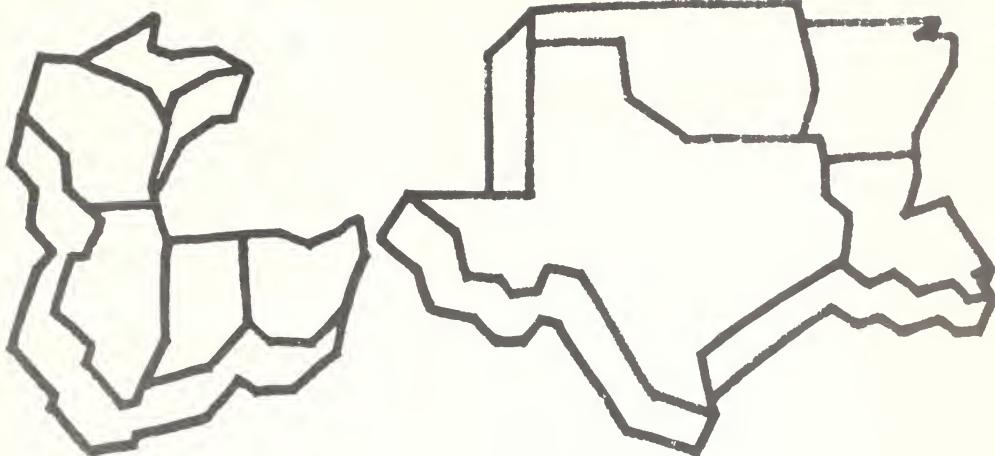
*Iowa* (farm export total: \$592 million) topped the Nation in meat and meat product exports and led the region in soybeans, feed grains, protein meal, soybean oil, hides and skins, and lard and tallow.

*Kansas* (\$392 million), the biggest U.S. wheat and flour exporter, also was a major shipper of feed grains, soybeans, and animal products.

*Minnesota* (\$357 million) was the Nation's No. 1 dairy exporter, plus selling sizable amounts of soybeans, feed grains, and wheat.

*Nebraska* (\$288 million) ranked as the region's second largest and the Nation's fourth biggest feed grain seller.

*Missouri* (\$275 million) was the region's second and the Nation's fifth most important exporter of soybeans and soybean oil and meal; *North Dakota* (\$244 million) stood second in the country in wheat and flour exports and led in flaxseed; and *South Dakota* (\$118 million) was a major supplier of wheat and flour and animal products.



The East North Central Region accounted for \$1.4 billion of our agricultural exports last fiscal year, roughly 18 percent of the total shipped by U.S. farmers. Of all the soybeans, soybean oil, and protein meal shipped abroad, more than a third originated in these five States, along with a fourth of the feed grains and dairy products and nearly one-fifth of the hides and skins sold abroad.

*Illinois* (farm export total: \$655 million) was not only the Nation's No. 1 export State, but it singlehandedly contributed 46 percent of the region's exports by value. First in soybeans, first in feed grain exports in the Nation, Illinois was also an important shipper of soybean oil, protein meal, and animal products.

*Indiana* (\$332 million) was runnerup in the region and third in the United States in soybean, soybean oil, and protein meal sales overseas.

*Wisconsin* (\$88 million) accounted for more than three-fifths of East North Central exports of hides and skins and dairy products—and was first and second in the Nation in exports of these items, respectively.

*Michigan* (\$113 million) was the region's top exporter of vegetables and fruits.

*Ohio* (\$232 million) shipped overseas sizable quantities of soybeans, feed grains, wheat, and protein meal.

West South Central farmers contributed \$1.2 billion, 16 percent, of the 1970-71 export total. Included in the region's shipments were three-fourths of the rice the United States sent overseas, along with half the cotton and cottonseed oil.

*Texas* (farm export total: \$554 million) was the No. 4 U.S. agricultural exporter last fiscal year and led the Nation in cotton and cottonseed oil sales. In fact, the State furnished a third of the cotton and cottonseed oil we sold abroad. It also supplied a fourth of the rice, an eighth of the feed grains, and nearly a tenth of the tallow and lard and hides and skins. Texas was also a major shipper of fruits, nuts, and vegetables.

*Arkansas* (\$339 million) was first in the Nation in rice shipments and led the region while ranking fourth in the Nation in soybean and protein meal sales overseas.

*Louisiana* (\$183 million) was the third most important U.S. shipper of rice and the fifth largest supplier of cotton and cottonseed oil exports. Soybeans, soybean oil, and protein meal were the other important State export items.

*Oklahoma* (\$145 million) was tops in the region and fifth in the Nation in wheat and flour shipments overseas. The rest of the State's exports were centered in feed grains, cotton, and livestock products.

## STATE OF OUR EXPORTS

If 1970-71 was a record-breaking farm export year, 10 States could take especial pride in the part they played in smashing the old record. For these 10 were the ones that sold more than \$4.5 billion—or 58 percent—of the 1970-71 total.

Top salesman to the world was Illinois with \$655 million worth of farm exports, almost a tenth of the total. Iowa was runner-up with \$592 million. Then follow: California (\$555 million), Texas (\$554 million), North Carolina (\$432 million), Kansas (\$392 million), Minnesota (\$357 million), Arkansas (\$339 million), Indiana (\$332 million), and Nebraska (\$288 million).

On a commodity basis, here are the ranking export items listed along with the biggest suppliers.

*Soybeans.*—Valued at \$1.3 billion, soybeans were our No. 1 export crop. Illinois, with overseas sales of \$237 million, was the top exporter, followed by Iowa (\$208 million), Indiana (\$116 million), Arkansas (\$108 million), and Missouri (\$101 million).

*Wheat and flour.*—Second on the list of overseas sales items, wheat and flour exports added up to \$1.2 billion in 1970-71. Major suppliers were Kansas (\$240 million), North Dakota (\$181 million), Montana (\$83 million), Washington (\$82 million), and Oklahoma (\$79 million).

*Feed grains.*—Exports were valued at \$1.1 billion with the top shippers being: Illinois (\$175 million), Iowa (\$145 million), Texas (\$134 million), Nebraska (\$102 million), and Minnesota (\$81 million).

The six remaining regions exported \$2.9 billion worth of farm items.

The South Atlantic Region supplied nearly nine-tenths of the tobacco going overseas along with a third of the poultry and a fourth of the fruits. By States farm exports last fiscal year totaled: Delaware (\$14 million), Maryland (\$38 million), Virginia (\$85 million) West Virginia (\$4 million) North Carolina (\$432 million), South Carolina (\$122 million), Georgia (\$141 million), and Florida (\$124 million).

The Middle Atlantic States contributed more than a tenth of our dairy exports. Exports totaled: New York (\$43 million), New Jersey (\$11 million), and Pennsylvania (\$53 million).

New England's exports centered on fruits and vegetables and tobacco. State totals were: Maine (\$4 million), New Hampshire (\$400,000), Vermont (\$3 million), Massachusetts (\$4 million), Rhode Island (\$100,000), and Connecticut (\$4 million).

East South Central farmers contributed about a fourth of the Nation's cotton and cottonseed oil exports plus more than a tenth of the poultry products. State totals: Kentucky (\$91 million), Tennessee (\$112 million), Alabama (\$78 million), and Mississippi (\$222 million).

The Mountain Region was the source of a fifth of the vegetables sold overseas in 1970-71. It also supplied a sixth of the wheat and was an important shipper of animal products. State totals: Montana (\$122 million), Idaho (\$97 million), Wyoming (\$17 million), Colorado (\$110 million), New Mexico (\$32 million), Arizona (\$71 million), Utah (\$19 million), and Nevada (\$5 million).

The Pacific Region shipped 95 percent of the U.S. edible nut exports, nearly two-thirds of the fruits, two-fifths of the vegetables, and 22 percent of the rice. State totals were: Washington (\$158 million), Oregon (\$63 million), California (\$555 million), and Hawaii (\$21 million). Alaska was not a farm exporter in 1970-71.



## SPOTLIGHT ON NEW ENGLAND

The six New England States—Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut—have never been known as agricultural powerhouses in all their long U.S. history. Yet it would be a mistake to assume the region is unimportant agriculturally.

Maine, for example, is one of the Nation's biggest potato producers. Massachusetts leads in cranberry production. Vermont is No. 2 in maple sirup output. Connecticut produces much of the country's cigar wrapper tobacco.

Byron Peterson is the Statistician in Charge of the Crop and Livestock Reporting Service in New England. Not too long ago, in his office in Boston, Mass., Peterson briefed us on some facts about farming in New England.

"Anyone driving through the region's picturesque countryside is bound to notice the attrition in farm numbers, the abandoned barns, the broken stone walls belonging to the farms of yester-year," Peterson said.

"The process of attrition actually started with the western migration of the 19th Century but it's been particularly marked in recent years. Today there are only half as many farms in New England as there were right after World War II."

"Nevertheless, agriculture still has an important role to play in New England," Peterson stated. "The huge populations of the industrial northeast afford a special marketing advantage for the region's agriculture."

Peterson went on to point out that

dairy products and eggs—for customers in the region's many metropolises—are among New England's most important farm commodities. Cash receipts from farm marketings totaled \$828 million in 1970—of which milk and eggs contributed \$432 million. Next in importance were broilers and chickens, at \$64 million, and cattle and calves, at \$43 million.

Maine is the only New England State where a crop heads the list of farm commodities ranked by value of sales. Of course, that crop is potatoes.

"All the New England States grow some potatoes," Peterson told us, "but in Aroostook County, Me., the crop is big business. In fact, the crop is pretty much the lifeblood of northern Maine's economy."

"Downeasters—as the State's inhabitants are called—harvested 35.1 million hundredweight of potatoes in 1970, valued at an estimated \$67 million. Nationally, Maine was No. 2 in potato output and No. 3 in value of sales. Roughly a third of the Maine crop goes to processors within the State."

The other top farming enterprises in Maine, in terms of the value of cash receipts in 1970, are: eggs at \$56 million; broilers at \$52 million; dairy products at \$42 million; and beef cattle at \$8 million.

In all, Maine's farm receipts added up to \$254 million in 1970, earning it the distinction of being New England's leading farm State.

New Hampshire, lying to the west of Maine, is a scenic land of mountains, lakes and rivers. While the Granite



These New Englanders are sugaring off in the traditional way. More and more, though, such scenes as these—where individual buckets are hung on trees—are giving way to plastic tubes which carry the sap to central tanks.

State is a vacationers' delight—tourism has blossomed into a \$338 million industry annually—the rough terrain is not particularly well suited to agriculture.

Indeed, in 1970 New Hampshire was 48th in the Nation in terms of cash receipts from farming. With a total of only \$54 million, New Hampshire was ahead only of Rhode Island (No. 49) and Alaska (No. 50) in the national listings.

The State's biggest agricultural moneymakers last year were livestock and products, which contributed over three-fourths of farm receipts. New Hampshire's dairy product sales totaled about \$23 million in 1970; eggs, \$12 million; and cattle and calves, \$4 million. Greenhouse and nursery products were the top crops, with sales worth \$4 million.

"Now, when I mention Vermont, you'll probably think of maple syrup," Peterson remarked. "That's what many out-of-Staters consider our top farm product, although in reality it accounts for only a little more than 1 percent of the State's farm receipts."

"The two contenders for the No. 1 spot in maple syrup production are always Vermont and New York. In 1970 New York won out with an output of 332,000 gallons compared with Vermont's 305,000. The value of the Vermont crop was about \$2 million."

Livestock products contributed more than 90 percent of the State's \$163 million worth of farm receipts in 1970. Dairy product sales alone were valued at \$126 million, followed by cattle and calves at \$16 million and eggs at \$5 million.

"Massachusetts is the second big-

gest farm State in the New England Region," Peterson informed us, "with cash receipts of \$169 million in 1970. Earnings are split just about evenly between livestock products and crops."

"On the livestock side, dairy products and eggs are the two most valuable Bay State farm businesses, with earnings of \$48 million and \$21 million, respectively, in 1970."

"As for crops, the big two are greenhouse and nursery products, valued at \$25 million, and cranberries at \$16 million."

Peterson credits the post World War II move to suburbia with giving the greatest impetus to the State's nursery and greenhouse industry. Massachusetts ranks 10th in the Nation in the value of the industry's sales.

"Massachusetts has been the world's foremost source of cranberries ever since the Pilgrims first found the berries growing wild in 1620," Peterson noted. "Cultivation originated on Cape Cod about 200 years later."

In 1970, Bay State farmers had 10,900 acres in cranberry bogs from which they harvested 957,000 barrels of cranberries—47 percent of U.S. production.

Rhode Island, the Nation's smallest State, has only a very limited agriculture. Its total cash receipts from farming amounted to only \$21 million last year with the leading commodities, in terms of value, being: dairy products (\$5 million); greenhouse and nursery products (\$5 million); potatoes (\$3 million); and eggs (\$3 million).

"Connecticut, eighth in the Nation in value of tobacco production, is renowned for its premier cigar binder and cigar wrapper tobacco," Peterson

explained. He went on to say that while acreage has declined sharply since World War II, largely because of processed binders, the cash value of 1970 tobacco production still totaled \$24 million.

"The Connecticut River Valley area, sometimes called Tobacco Valley, accounts for one-half of U.S. wrapper-type production and over one-eighth of binder types. But probably there are many smokers even in Connecticut who don't realize that the highly advertised 'Havana' blend is home-grown."

While tobacco is Connecticut farmers' top crop in terms of value of marketings, dairy products and eggs are the State's leading farm commodities. Cash receipts for these two items totaled \$47 million and \$42 million, respectively, in 1970. Greenhouse and nursery products were fourth in importance, with sales worth \$20 million.

## BIO-DEBATABLE DDT

DDT is one of the most widely used chemical compounds in the world for controlling insects. However, because of concern about its threat against the environment and resistance many pests have developed to DDT, use has dropped sharply since 1959.

In 1959, domestic use was about 78.7 million pounds; in 1969 it was down to 30.3 million pounds.

Farmers are the major users of DDT in the United States, accounting for well over one-half of the Nation's total. About 95 percent of the DDT sprayed on farms is applied to crops, with cotton the big recipient.

According to the most recent data available, about three-fourths of the DDT used by farmers was applied on cotton grown mostly in the Southeast, Delta States, and Southern Plains.

Cotton growers use DDT to control more than a dozen insects, including the bollworm, cotton fleahopper, and thrips.

Significant but decreasing amounts of DDT are used on fruits and vege-

tables. Sixteen percent of the fruit acres were treated with DDT in 1964 and a somewhat smaller share in 1966. Use of DDT on fruits dropped about 20 percent in the 2-year period—from 1.9 million pounds to 1.5 million pounds. About 1.4 million pounds of DDT were applied on 0.8 million acres in 1967.

The amount used on soybeans went up from 0.5 million pounds in 1964 to 0.7 million pounds in 1966. However, the acreage treated was down slightly. The difference is largely accounted for by a reduction in treated acreage in the Corn Belt, where applications were generally at a relatively low rate, and an increase in the acreage treated in the Southeast where rates are generally higher.

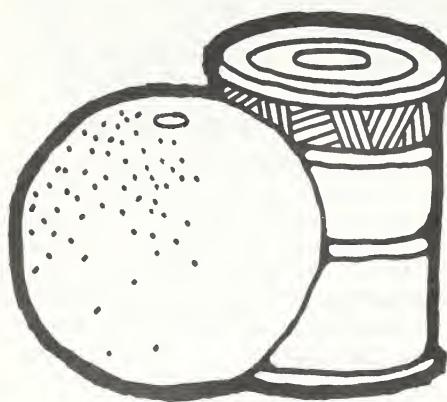
There was an increase in acres of peanuts treated with DDT and a decrease in treated acreage of other field crops—primarily corn, wheat, and hay. Peanuts generally were treated at a higher rate than the others with the net result that the total amount of DDT used on all field crops was up.

Use of DDT for livestock pest control was only 2 percent of total 1964-66 use. In 1964, farmers used about 0.6 million pounds on livestock and in livestock buildings. The amount dropped to 0.5 million pounds in 1966.

At the beginning of 1971 only one company was producing DDT in the United States, compared with about 13 in the early 1950's. Production peaked at 188 million pounds in 1963 and declined to 144 million pounds in 1967, but was slightly higher the next 2 years.

Although both domestic use and exports have shrunk in recent years, domestic use has fallen most rapidly, dropping more than 60 percent from 1959 to 1969. Exports dropped nearly 30 percent from a high of 114 million pounds in 1963 to 82 million pounds in 1969.

In recent years, exports claimed 70 percent of total U.S. production. Shipments to India and her neighbors made up a large share of these exports. Much of the DDT was purchased primarily for malaria eradication.



## ORANGES ALL LOCKED UP

Though it's best served cold, orange juice is nonetheless a hot item on commodity exchanges. That's why Agriculture Secretary Hardin signed a regulation in December 1970 denoting sweet oranges a speculative commodity and "locking up" crop forecasts during the growing season.

Each month during October-July a half dozen agricultural specialists meet under strict security conditions to tabulate the data gathered from citrus producers and objective yield surveys.

Two members of this group, known as the Sweet Orange Board, are from citrus producing States. The Statistician in Charge of the Florida Crop and Livestock Reporting Service, Joe Mullin, is a permanent member of the six-man board because his State produces about 75 percent of the Nation's oranges.

SRS' Crop Reporting Board has made production estimates for oranges and other citrus crops since 1910. However, it's only in recent years that trading in frozen concentrate orange juice futures has become intense, heightening the need for such information as: How big is the crop? Did a freeze hurt production? What's the juice yield per box of oranges?

To prevent advance information from becoming available to anyone, USDA put data on oranges under wraps at the request of the Florida Citrus Mutual with its 16,000 members and the Florida Canners Association. Other industry groups endorsing the move were the Citrus Crop Estimates Advisory Committee made up of the Mutual and Canners organizations, and the Florida Citrus Commission, the Growers Administrative Committee, and the Fresh Fruit Shippers Association.

All other major citrus States—California, Texas, and Arizona—concurred in the new arrangement, though only Florida and California estimates are set in lock-up.

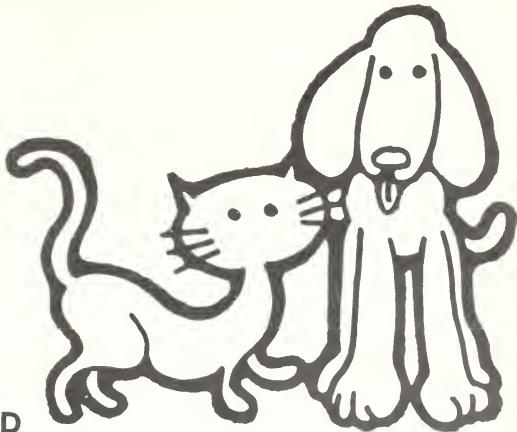
"Lock-up" is followed with commodities designated speculative. For example, reports dealing with corn, wheat, soybeans, oats, and cotton have long been prepared under tight security conditions.

Doors at both ends of the USDA corridor where estimates are compiled are locked and guarded, window blinds are drawn and sealed, and phones disconnected. All employees who enter the corridor must show a pass and none may leave until the official release hour of 3 p.m., eastern time.

In addition to preventing premature leaks of estimates, the security arrangements have relieved the pressure on Mullin's Florida staff of statisticians. Formerly they were constantly being contacted for indications of production before estimates were officially reviewed and released from Washington.

For a while prior to the designation of sweet oranges as a speculative crop, Mullin's office would transmit a summary of Florida production indications by code to the Crop Reporting Board.

Finally, it was decided that all data collected on the Florida crop, in rough form, would be taken to Washington for summarization. At USDA headquarters, the Florida story is coupled with information from the other citrus States and estimates are determined by the Sweet Orange Board.



## FANCY FARE FOR FIDO AND FRIEND

Time was when the family dog and cat ate scraps from the table. Nowadays, many of America's 26 million family-owned canines and 21 million felines dine on commercially prepared foods estimated to be worth more than \$1 billion. The pet food industry has grown sharply during the past two decades. Pet foods, although relatively small when compared with feeds consumed by livestock, now equal 2 percent of the tonnage of all feed concentrates consumed and a higher percentage of the protein feeds.

In 1967, last year for which Census reported tonnages, manufacturers shipped 2.7 million tons of dog and cat food. That represented a 22-percent gain over 1963, 68 percent over 1958, and more than double the 1954 figure.

In addition to dog and cat foods, special feeds for fur-bearing and laboratory animals, rabbits, birds, and other pets reached 711,000 tons in 1967—bringing shipments of all pet feeds to 3½ million tons.

Allowing for recent growth rates, pet food and specialty feed output nowadays probably top 4 million tons annually.

From 1954 to 1967, value of dog and cat foods shipped from processing plants climbed from \$242 million to \$700 million. In 1969 value rose to \$970 million—a 38.5-percent increase in only 2 years. Economists figure present value at well over \$1 billion.

The Nation's pets often dine on foods that are high in protein. It is estimated that between 30 to 40 percent of the ingredients in their foods come from the Nation's high-protein feed supply. That means 5 to 8 percent of our high-protein feeds—the equivalent of 1 to 1½ million tons—are going into the pet food industry.

The typical supermarket often carries over 100 different kinds of pet foods—and dog foods lead the pack in competing for space on grocers' shelves. In 1967 dog foods accounted for roughly 73 percent—over 2 million tons—of total shipments from processing plants. Cat foods totaled roughly 270,000 tons or about 10 percent while other pet foods, including dog and cat foods not specified by kinds, comprised the remaining 17 percent.

Dry pet foods come from largely conventional supplies of feed concentrates and contain combinations of the following ingredients: ground corn or cornmeal, soybean meal, meat meal, wheat byproducts, corn gluten meal, animal fats, oatmeal, fishmeal, dried milk products, alfalfa meal, minerals, and vitamins.

Canned dog and cat foods contain much more animal and fish protein, although some have many of the same ingredients as dry foods. Typical contents include horsemeat, chicken, beef, fish, fishmeal, and meat byproducts.

## PUTTING OUT THE WELCOME MAT

Some of SRS's most important customers—farmers—visited Washington, D.C., this past September to watch statisticians do their thing.

Eight midwestern grain and livestock farmers were invited behind the locked doors of the U.S. Department of Agriculture's Crop Reporting Board to learn how a crop report is prepared.

The men met members of the Board

and heard explanations of survey procedures and estimating techniques. USDA Secretary Clifford M. Hardin also discussed the importance of crop reporting with the visitors.

The group included: Robert Altman (Bondurant, Iowa); Jack Elliott (Mount Ayr, Iowa); Durbin Budd (Lebanon, Ind.); Walter Harris (Jasper, Ind.); Leland George (South Sioux City, Nebr.); Robert Phillipson (Bloomington, Nebr.); Kenneth W. Gordon (Blue Mound, Ill.) and Harold Strand (Cordova, Ill.).



USDA's Director of Agricultural Economics, Don Paarlberg, outlines the crop estimating program to visiting Midwest farmers.



Farmers and Crop Reporting Board get together for a look at the estimates and comments that went into the September release. Standing left to right are Leland George, Robert Altman, Durbin Budd, Jack Elliott, Walter Harris, Robert Phillipson, Harold Strand, and Kenneth Gordon. The Board members seated left to right are Richard Max, Bruce Graham (Chairman), Bruce Kelly (Director of Agricultural Estimates), Frazier Galloway, Carl Cross, Charles Burkhead, and Ellory Anderson.



Agriculture Secretary Clifford M. Hardin, who is seated at the far left, meets with farmers following their day with the SRS Crop Reporting Board.

## CONVENIENT CONTRAPCTIONS

Strange shaped machines move through orchards and fields today to harvest crops once thought eternally bound to hand labor.

Fruits, vegetables, and tobacco are becoming mechanized — mechanization to the extent now envisioned was considered a remote possibility as recently as 1960.

A rundown of some of the latest in harvesters includes the following mechanical monsters and robots:

*Shake and catch:* A machine grips a tree's trunk or limbs and shakes off the fruit. The fruit falls onto catching frames and is then passed by a conveyor to receiving and grading equipment.

The mechanical peach picker belongs to this family. It's found a home California in a short time. In 1968, 3 percent of California's cling peaches were mechanically harvested. By 1970, the figure had risen to 10 percent.

As to the quality of the fruit gathered, machine operators in 1970 said it was as good or better than what was picked by hand. Processors, however, noted this judgment was made on a grade-out basis. (Bruises can show up many hours after picking.)

Similar machines are being adopted or tested to harvest apples, pears, apricots, plums, olives, and citrus.

The shake and catch method has been most successful for fruits intended for processing. Prunes and tart cherries, for example, are now almost 100 percent harvested this way.

The method is still mainly experimental for fruits harvested for fresh market. Fruit damage and other problems haven't been fully solved.

Nuts, such as almonds and walnuts, can also be shaken loose—although the catching frame is often done away with and the nuts allowed to fall to the ground.

*Test and cut:* USDA's Agricultural Research Service is working on a selective lettuce harvester.

Two roller-like devices press a grow-

ing lettuce head from each side. If the head feels firm and mature, a blade is triggered to cut it. The harvester conveys the lettuce to the machine's center, where fieldworkers trim and pack by hand.

Some research has been done on a mechanical trimmer but little success in laborsaving has been made to date.

*Straddle and shake:* Some wine grape harvesters are now in use. One of these straddles grape rows and has six sprocket-like attachments on each side. The attachments shake the trellises of the grapes. Grapes are knocked into a conveyor belt and whisked into a tractor-pulled gondola.

*Prime and rack:* One of these mechanical harvesters picks the leaves from the stalk of flue-cured tobacco and conveys them to trailers. The tobacco is transported to an area outside a bulk curing barn where it is racked and then placed in the barn.

## WHOLE LOT OF SHAKING GOING ON

"Give her 15 G's."

A scientist at Cape Kennedy? No, an agricultural engineer at the University of Wisconsin giving some cherry trees a shakedown.

Scientists at the university are studying the forces at work when cherries are picked by a mechanical shaker and dropped into a canvas receiving area under the tree.

A shaking frequency of 1,200 cycles per minute at a sway of 0.4 inch puts an acceleration force of 15 G's on the fruit. (Astronauts are subject to an acceleration force of only about 6 G's when they blast off.)

Cherry picking by means of a mechanical shaker is rapidly taking over the entire harvest of sour cherries and some other fruits. Now engineers and orchard operators are down to the fine points of determining exactly what is the best speed and sway to remove cherries by this method.

The results found in these studies will give some practical points for engineers to use in designing and operating cherry tree shakers.



# outlook

Digested from outlook reports of the Economic Research Service.  
Forecasts based on information available through November 1, 1971

**HOG SLAUGHTER** will be down substantially during first half 1972, as Corn Belt producers cut June–November farrowings 10 percent from 1970 and plan to have 11 percent fewer sows farrow during December 1971–February 1972. Total slaughter may not drop as much as Corn Belt activity alone would indicate. Producers in other States are apparently reducing farrowings less and litter size nationally will probably be larger than the below-average sizes in second half 1970 and the first half of this year.

●  
**HOG PRICES** are likely to stay strong during the winter and spring as slaughter supplies dwindle. Prices during the first half of 1972 are expected to stand well above the year-earlier average of \$17.50, but below that of 2 years earlier, \$25.50.

●  
**HOG WEIGHTS** . . . As corn prices drop, producers may feed hogs to heavier market weights this winter and spring, tending to offset the reduction in marketings.

●  
**CYCLIC TURN** . . . Just as very low hog prices joined with higher feed costs discouraged hog production in late 1970, higher hog prices and lower feed costs will probably spur farrowings sometime during 1972. But producers generally need some time to respond to changed situations. Mostly, they wait till hog-corn ratios are topping 20 to 1 before they expand.

●  
**FED CATTLE** . . . Substantially increased fall placements should boost first half 1972 marketings—with big gains over a year earlier coming in the spring. Judging by the number of young cattle inventoried last January 1, the larger 1971 beef crop, and the small January–August increase in steer and heifer slaughter, producers can place many more feeders in lots. At midyear, there were 1.5 million more young animals available for feeding than at the same time in 1970.

**SHEEP AND LAMBS . . .** Commercial sheep and lamb slaughter totaled 5.4 million head during the first 6 months of the year, up 2% from a year earlier. All the increase came during January–March—when slaughter rose 6%. Higher slaughter levels this year indicate that producers are continuing to reduce breeding stock.

●

**SOYBEANS . . .** Supplies remain relatively tight for the 1971–72 season. Supplies may total around 1.3 billion bushels—7% below last year and 12% under 1969–70's record high. Farmers' prices probably will average about \$3 per bushel, sharply above the CCC support rate of \$2.25.

●

**SOYBEAN USE . . .** Prospective use of 1.2 billion bushels exceeds the 1.18-billion bushel crop of 1971 but falls short of 1970–71's record disappearance, 1.27 billion bushels. Carryover stocks on September 1, 1972 will probably be near this year's low operating level.

●

**COTTONSEED CRUSH . . .** Crushings of cottonseed this season may total around 4.3 million tons, up from 3.7 million in 1970–71. A crush of this size would produce about 1.4 billion pounds of oil and 2 million tons of cake and meal. Total supplies of cottonseed for 1971–72 may total 4.8 million tons, up 14% from a year before. Oil stocks totaled 167 million pounds last August, compared with 214 million on August 1, 1970.

●

**LARD . . .** Lard production rose a tenth during the 1970–71 marketing year, bringing total production to 2 billion pounds. An increase of nearly a fifth in hog slaughter offset declining lard yields. Yields averaged only 21 pounds, off a pound from 1969–70. Lard output in the 1971–72 marketing year will probably drop 5–7% as hog slaughter falls.

●

**RICE . . .** This year's 84-million-cwt. crop is only a bit bigger than last year, however, carryover on August 1 was 18.6 million cwt., the biggest since 1957 and 13% over a year earlier. The outlook for 1971–72 points to another large supply—104 million cwt., up 3% from last season and the third largest on record.

●

**RICE USE** in 1971–72 will probably equal production. Both exports and domestic disappearance are expected to gain. Domestic use, about two-fifths of the total, may rise because of stepped-up use by the food industry. Carryover next August should about equal this summer's relatively high level.

**TOBACCO . . .** This year's 6% smaller crop and 1% smaller carryover will probably add up to a 5.45-billion pound supply for 1971-72, 2% less than last year. While the supply is down, it's large in relation to disappearance, which is forecast at slightly under 1970-71's 1.93 billion pounds. The drop reflects a further fall-off in tobacco use per cigarette.

**CIGARETTES . . .** U.S. cigarette output this year may equal last year's 585 billion. Per capita use is steady after declines for the past 4 years. Consumption per person (18 and older) is estimated about the same as in 1970, when 3,985 cigarettes (199 packs) were puffed.

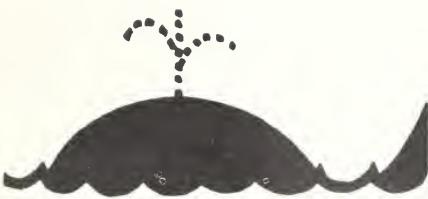
### STATISTICAL BAROMETER

Item	1969	1970	1971—latest available data
Farm output, total (1967=100)	103	102	110 Oct.
Crops (1967=100)	104	100	112 Oct.
Livestock (1967=100)	101	106	106 Oct.
Prices received by farmers (1967=100)	108	110	113 Oct.
Prices paid, interest, taxes, wage rates (1967=100)	109	114	121 Oct.
Ratio <sup>1</sup>	99	96	93 Oct.
Consumer price index:			
All items (1967=100)	110	116	122 Sept.
Food (1967=100)	109	115	119 Sept.
Disposable personal income (\$bil.)	634.2	687.8	741.1 (3)
Expenditures for food (\$bil.)	106.1	114.0	119.7 (3)
Share of income spent for food (percent)	16.7	16.6	16.2 (3)
Farm food market basket: <sup>2</sup>			
Retail cost (\$)	1,174	1,225	1,252 Sept.
Farm value (\$)	478	480	471 Sept.
Farmer's share of retail cost (percent)	41	39	38 Sept.
Agricultural exports (\$bil.)	6.4	7.2	.8 Sept.
Agricultural imports (\$bil.)	4.5	5.7	.7 Sept.
Realized gross farm income (\$bil.)	55.5	56.6	57.6 (3)
Production expenses (\$bil.)	38.7	40.9	42.8 (3)
Realized net farm income (\$bil.)	16.8	15.7	14.8 (3)

<sup>1</sup> Ratio of index of prices received by farmers to index of prices paid, interest, taxes, and farm wage rates.

<sup>2</sup> Average quantities per family and single person households bought by wage and clerical workers 1960-61 based on Bureau of Labor Statistics figures.

<sup>3</sup> Annual rate, seasonal adjusted second quarter.



## WHALE OF A TALE

December 1, 1971, marks the end of an epoch in American history. After that date, the Government's ban on whaling by U.S. mariners goes into effect.

We're also outlawing all sperm whale product imports—even though we're the world's top sperm oil user—to prevent the extinction of sperm whales and seven other classes.

The whalers' loss may be the farmers' gain as replacements for strategically critical sperm oil are sought. The oil is so important because it tolerates wide variations in temperature, is nongumming, and stable under high heat and pressure. It's especially important for transmission fluids and cutting oils.

U.S. use runs some 55 million pounds a year—about a fifth of world production—mostly imported.

To replace sperm oil, USDA scientists are researching three oil producing plants—crambe, jojoba, and limanthes—now growing wild in the Southwest. Among these, crambe is the most apt prospect. U.S. industry is also looking into possible synthetic substitutes. However, no one product is likely to satisfy all needs.

## SRS IN SOUTH AMERICA: CHAPTER TWO

Crop and livestock reporting has gotten off to a successful start in Colombia, according to team members from SRS and ERS who have been working with statisticians in that South American country. A program, funded by AID, has provided USDA experts to Colombia for the past few years to train statisticians and help establish an agricultural estimating program. (See story in the January-February 1971 Agricultural Situation that gave the first account of the Colombian estimating program.)

The release of the first crop report by Columbia's Department of National Statistics (DANE) on October 6, 1970, was a ceremonial occasion, with many heads of Colombian government agencies there to receive copies. The report provided annual estimates for 10 crops for 1960-69 and estimated by semesters (6-month periods) for 1970.

Colombia increased its crop reports to four a year in 1971. There is a growing demand for expanding statistical coverage: surveying more crops and breaking down estimates by regions in the country. The first livestock report was issued April 6, 1971. It included estimates of cattle inventories, births, deaths, and slaughter.

SRS and ERS statisticians have now started work on a similar project in Panama. The first published crop reports from this project should be forthcoming in early 1972.

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